<u>CLAIMS</u>

What is claimed is:

1.   A method of identifying and managing network elements in a communication

5   system, comprising the steps of:

representing a network element feature as a logical entity;

defining one or more characteristics associated with the network element, the

characteristics related to functional attributes of the network element with respect to the

communication system;

10   defining one or more profiles for each characteristic, the one or more profiles

assigning specific values to each characteristic.

2.   The method of claim 1 wherein the communication system comprises a SONET

ring network, and wherein the network elements comprise network interface devices or

15   transmission links between network interface devices.

3.   The method of claim 2 wherein the network element feature is a network

hardware device.

20   4.   The method of claim 2 wherein the network element feature is a data signal.

5.   The method of claim 1 wherein each network element of the communication

system is assigned a profile of the one or more profiles.

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6.   The method of claim 5 wherein the one or more characteristics comprise failure conditions associated with the network elements, and wherein the one or more profiles define alarm levels generated for each failure condition.

7.   The method of claim 6 wherein the alarm levels indicate a type of alarm transmitted to a network administrator of the communication system if a corresponding failure condition is detected by the network element represented by the logical entity.

8.   The method of claim 5 wherein the one or more characteristics comprise performance characteristics associated with the network elements, and wherein the one or more profiles define alert levels generated for each performance characteristic.

9.   The method of claim 8 wherein the alert levels indicate a type of alert transmitted to a network administrator of the communication system if a corresponding performance measurement is detected by the network element represented by the logical entity.

10.   The method of claim 5 wherein the one or more characteristics comprise user characteristics associated with users of the network elements, and wherein the one or more profiles define user attributes for each user.

11.   A network node for use in a communication network, comprising:

means for representing a feature of the network node as a logical entity;

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means for defining one or more characteristics associated with the network node, the characteristics related to functional attributes of the network element with respect to the communication network;

means for defining one or more profiles for each characteristic, the one or more

5   profiles assigning specific values to each characteristic.

12.   The network node of claim 11 wherein the communications network comprises a SONET network and wherein the network node comprises one of a network interface device and a transmission link between network interface devices coupled to the

10   communications network.

13.   The network node of claim 12 wherein the feature of the network node is a network hardware device.

15   14.   The network node of claim 12 wherein the feature of the network node is a data signal.

15.   The network node of claim 11 wherein the network node is assigned a profile of the one or more profiles.

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16.   The network node of claim 15 wherein the one or more characteristics comprise failure conditions associated with the network node, and wherein the one or more profiles define alarm levels generated for each failure condition.

17.   The network node of claim 16 wherein the alarm levels indicate a type of alarm transmitted to a network administrator of the communication network if a corresponding failure condition is detected by the network element represented by the logical entity.

18.   The network node of claim 15 wherein the one or more characteristics comprise performance characteristics associated with the network node, and wherein the one or more profiles define alert levels generated for each performance characteristic.

19.   The network node of claim 18 wherein the alert levels indicate a type of alert transmitted to a network administrator of the communication system if a corresponding performance measurement is detected by the network element represented by the logical entity.

20.   The network node of claim 15 wherein the one or more characteristics comprise user characteristics associated with a user of the network node.